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Christine Lee

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTINE LEE, CHIEN-MEEN HWANG, and YONG LI

Appeal 2010-000360
Application 10/612,954
Technology Center 2600

Before JOHN C. MARTIN, JOSEPH F. RUGGIERO, and
MARC S. HOFF, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Final Rejection of claims 1-7, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Rather than reiterate the arguments of Appellants and the Examiner, we refer to the Appeal Brief (filed September 25, 2006), the Answer (corrected, mailed June 15, 2007), and the Reply Brief (filed January 3, 2007) for the respective details. We have considered in this decision only those arguments Appellants actually raised in the Briefs. Any other arguments which Appellants could have made but chose not to make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellants' Invention

Appellants' invention relates to a wireless transceiver that uses a digital automatic gain control (AGC) module. The AGC is configured to set a gain to an initial gain value for mapping a received wireless signal to a first power value for an input circuit having a prescribed input range. Upon a determination by the AGC module that the first power value of the received wireless signal does not exceed the prescribed input range, the digital AGC module calculates an optimum gain for the received wireless signal relative to the initial gain value and the first power value. If the first power value is determined to exceed the prescribed input range, the AGC module determines the optimum gain based on setting the gain to a minimum value. (*See generally* Spec. 2:9-33).

Claim 1 further illustrates the invention and reads as follows:

1. A method in a wireless transceiver, the method including:
setting a gain to an initial gain value for mapping a received wireless signal to a first power value for supply of the received wireless signal to an input circuit having a prescribed input range;
amplifying the received wireless signal by the initial gain value to the first power value;
if the first power value of the received wireless signal does not exceed the prescribed input range, determining an optimum gain for the received wireless signal relative to the initial gain value and the first power value;
if the first power value of the received wireless signal exceeds the prescribed input range, determining the optimum gain for the received wireless signal based on setting the gain to a minimum gain value; and
outputting the received wireless signal at the optimum gain.

The Examiner's Rejections

The Examiner's Answer cites the following prior art references:

Wheatley, III (Wheatley)	US 5,732,341	Mar. 24, 1998
Kopmeiners	US 5,917,865	June 29, 1999

Claims 1 and 4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kopmeiners.

Claims 2, 3, and 5-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kopmeiners in view of Wheatley.

ISSUE

Based on Appellants' contentions, as well as the findings and conclusions of the Examiner, the pivotal dispositive issue before us is whether the Examiner erred in finding that Kopmeiners discloses the setting of the gain value of a received signal to a minimum value if a first power value to which the received signal is amplified exceeds a threshold value.

ANALYSIS

35 U.S.C. § 102(b) Rejection

Appellants' arguments contend that, in contrast to the requirements of each of the rejected independent claims 1 and 4, Kopmeiners has no disclosure of determining optimum gain of a received signal based on setting the gain to a minimum gain value if a first power value to which the received signal is amplified exceeds a threshold value. According to Appellants (App. Br. 16-17; Reply Br. 9), the portion of Kopmeiners (col. 2, ll. 57-65) relied upon by the Examiner merely discloses that the gain value can be decremented in incremental steps by a value that approximates the dynamic range of the digital circuit, i.e., 20 dB, in Kopmeiners' example. In Appellants' view, the cited portion of Kopmeiners at best discloses the decrementing of the gain value in 20 dB increments toward a minimum value, but does not disclose setting the gain to a minimum value as claimed.

We agree with Appellants. We find nothing in the cited portion of Kopmeiners which could reasonably be construed as disclosing setting the gain of the received signal to a minimum value. While Kopmeiners does indeed describe a search algorithm in which the gain of the received signal is *adjusted* in minimum 20 dB increments, the actual gain of the received

signal is not *set* to a minimum value as claimed. In the search algorithm disclosed by Kopmeiners, the successive 20 dB increments by which the gain of the received signal is decremented will end when the received signal value falls within the dynamic range of the ADC 120 (col. 5, l. 64-col. 6, l. 9). The amount of the signal gain, however, required to arrive at a signal value which falls within the dynamic range of the ADC 120 is not *set*, let alone *set to a minimum value*, as claimed.

In view of the above discussion, since all of the claim limitations are not present in the disclosure of Kopmeiners, we do not sustain the Examiner's 35 U.S.C. § 102(b) rejection of appealed independent claims 1 and 4.

35 U.S.C. § 103(a) REJECTION

We also do not sustain the Examiner's obviousness rejection of dependent claims 2, 3, and 5-7 based on the combination of Kopmeiners and Wheatley. The Examiner has applied the Wheatley reference to Kopmeiners to address the signal to noise ratio gain setting condition feature of the rejected claims. We find nothing in the disclosure of Wheatley, however, which overcomes the innate deficiencies of Kopmeiners discussed *supra*.

CONCLUSION

Based on the findings of facts and analysis above, we conclude that the Examiner erred in rejecting claims 1 and 4 for anticipation under 35 U.S.C. § 102(b), and in rejecting claims 2, 3, and 5-7 for obviousness under 35 U.S.C. § 103(a).

DECISION

The Examiner's decision rejecting claims 1 and 4 under 35 U.S.C. § 102(b) and claims 2, 3, and 5-7 under 35 U.S.C. § 103(a) is reversed.

REVERSED

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